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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,708	09/17/2003	Michael Allen Bryner	TK3690USNA	4383
23906 7590 01/18/2007 E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805			EXAMINER PIZIALI, ANDREW T	
			ART UNIT	PAPER NUMBER
			1771	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	01/18/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/664,708

Applicant(s)

BRYNER, MICHAEL ALLEN

Examiner

Andrew T. Piziali

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-24 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-14, 16, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/17/03 & 1/16/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule, 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission and declarations filed on 10/25/2006 have been entered.

Response to Amendment

2. The examiner has withdrawn the rejection of claim 2 based on the cancellation this claim.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 4-14, 16, 23 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The specification is silent regarding a nonwoven fabric comprising a barrier web consisting of continuous fibers having the claimed hydrohead and Frazier permeability. The amendment filed on 7/25/2005 introduced the word "continuous" to the claims. Although the specification mentions a "model" based on continuous glass fibers (page 15, lines 23-30), the

model refers to a glass fiber mat analyzed for the affect of varying variables such as diameter on properties such as permeability and hydrohead.

5. Claims 1, 4-14, 16, 23 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. In the event that it is shown that the claims contain subject matter that was described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention, the claims still contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification discloses that the nonwoven fabrics may be made as described in USPN 4,127,706, but this patent does not teach or suggest that the fibers are continuous.

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 4, 7-9, 13, 14 and 16 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US Patent Application Publication 2003/0129909 to Zucker.

Regarding claims 1, 4, 7-9, 13, 14 and 16, Zucker discloses a nonwoven fabric having a support layer and a barrier layer formed from nanodener continuous filaments (paragraph 9). The fiber diameter for the infinite length fibers of the barrier layer is preferably less than 500 nanometers (0.5 micrometer) (paragraph 9). The fabric is useful as a barrier in disposable hygiene applications and filtration (paragraph 14). Although Zucker does not explicitly teach the limitations of hydrohead values or Frazier permeability, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. nanofiber barrier layer) and in the similar production steps (i.e. bonding to a substrate layer) used to produce the nonwoven fabric. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. Alternatively, the claimed limitations are readily obtainable through routine experimentation with variables such as fiber size and basis weight and because it is understood by one of ordinary skill in the art that discovering an optimum value of a result effective variable involves only routine skill in the art. It is noted that Zucker specifically teaches that the material is made in order to create a barrier layer with improved hydrostatic head (paragraph 9).

With regard to claims 7-9, Zucker discloses using polyolefin in the nanofibers, including propylene and ethylene units (paragraph 10).

With regard to claim 13, Zucker does not teach a solids fraction value for the barrier fabric. As set forth above, it is reasonable to presume Zucker inherently meets this limitation because of the use of similar materials and similar methods. Alternatively, the claimed limitation would obviously have been provided by Zucker because the reference discloses improving barrier performance barrier performance and reducing pore size using smaller fiber diameter (paragraph 9).

With regard to claim 14, Zucker does not disclose the basis weight, hydrohead, and Frazier permeability as described in the claimed formula. As set forth above, it is reasonable to presume Zucker inherently meets this limitation because of the use of similar materials and similar methods. Alternatively, the claimed limitations are readily obtainable through routine experimentation with variables such as fiber size and basis weight and because it is understood by one of ordinary skill in the art that discovering an optimum value of a result effective variable involves only routine skill in the art.

With regard to claim 16, Zucker discloses the nanofiber barrier layer is bonded to spunbonded support layer (claim 5).

Claim Rejections - 35 USC § 103

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2003/0129909 to Zucker in view of USPN 6,114,017 to Fabbicante et al. (hereinafter referred to as Fabbicante).

Zucker discloses that the basis weight of the barrier layer affects the resulting pore size of the fabric (paragraph 29). However, Zucker fails to teach the barrier layer to have a basis weight within the claimed range. Fabbicante also teaches nonwoven webs comprising nanodenier fibers used in absorbent garments and filters (Abstract). Fabbicante teaches that basis weights of the barrier fabrics may be between 10 and 30 gsm, and that increasing the basis weight improves hydrostatic head (See Tables 1 and 2). It would have been obvious to a person having ordinary skill in the art at the time of the invention to use a barrier layer with a basis weight between 20 and 51 gsm in the fabric of Zucker in order to obtain an optimal amount of hydrostatic head, as taught by Fabbicante.

10. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2003/0129909 to Zucker in view of USPN 6,746,517 to Benson et al. (hereinafter referred to as Benson).

Zucker does not teach adding a hydrophobic coating material. Like Zucker, Benson is directed to a fine fiber nanodenier fabric useful in filter media (Abstract). Benson teaches that adding a hydrophobic coating to the nanofibers is preferable, and such a coating is typically fluorocarbon containing (column 12, lines 47-67). It would have been obvious to a person having ordinary skill in the art at the time of the invention to add fluorocarbon coating to the material of Zucker in order to improve filtration property, as taught by Benson.

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2003/0129909 to Zucker.

Zucker discloses that the finer denier layer creates smaller average pore sizes in the fabric (paragraph 29). While Zucker does not disclose any particular pore size for the invention, Zucker does teach that the prior art barrier layers created pore size distributions in the 7 to 12 micron range and 10 to 15 micron ranges (paragraph 6). Since the aim of Zucker is to produce an improved barrier fabric, it must be assumed that the pore size distribution in the barrier layer is improved over the prior art. It would have been obvious to a person having ordinary skill in the art at the time of the invention to provide pore sizes of no more than 23 micrometers in the barrier layer of Zucker in order to provide an improved barrier layer, as taught to be desired by Zucker.

12. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2003/0129909 to Zucker in view of USPN 6,554,881 to Healey.

Zucker uses a spunbonded fabric for the support layer (claim 5) but does not disclose the diameter of the fibers in that layer. Like Zucker, Healey teaches a filter fabric layer comprising fine fiber layer bonded to a support layer of spunbonded fibers (Abstract). Healey teaches that the spunbonded support layer has a fiber diameter ranging from 5 to 15 microns (column 30, lines 64-67). Because Zucker is silent to the diameter of the support layer fibers, it would have been necessary, and therefore obvious to a person having ordinary skill in the art at the time of the invention to use spunbonded fibers having a diameter in the range of 5 to 15 microns in order to provide a support layer that is sufficient for filtration purposes, as taught by Healey.

Response to Arguments

13. Applicant's arguments filed 10/25/2006 have been fully considered but they are not persuasive.

Firstly, applicant's request for the examiner to contact the attorney of record to schedule an interview is noted, but the examiner, unfortunately, is under a time deadline to respond to applicant's last communication. In the event the applicant desires an interview, it is suggested that an interview be scheduled during the time allotted to the applicant to respond to the examiner's last communication.

As now admitted by the applicant, Fabbicante does disclose continuous filaments of 0.5 microns. Fabbicante provides a specific example comprising a mixture of continuous and discontinuous fibers having an average diameter of 0.5 microns (column 9, lines 22-49). The applicant asserts that this is not relevant because the amended claims recite the barrier webs consist (closed claim language) of continuous fibers. The examiner respectfully disagrees. It is clear that Zucker teaches making continuous filaments within applicant's claimed range and Fabbicante provides an enabling disclosure as to the making of nanodenier continuous fibers.

The applicant appears to be asserting that one skilled in the art would be unable to make the continuous fibers in the absence of discontinuous fibers and that one skilled in the art would also be unable to alternatively separate the continuous fibers from the discontinuous fibers. The examiner respectfully disagrees. The examiner contends that the applicant has failed to show, or attempt to show, that one skilled in the art would be unable to perform one or both of these steps. It is well settled that unsupported arguments are no substitute for objective evidence. In re Pearson, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974).

In addition to the above argument, the applicant submitted a Guckert Declaration. In the declaration, in direct opposition to Fabbicante specifically referring to the production of fibers with an average diameter of 0.5 micron (column 9, lines 22-49), Guckert asserts that Fabbicante cannot make fibers with the disclosed average diameter. The examiner respectfully disagrees. Even the Guckert Declaration specifically, and unequivocally, admits that the method disclosed by Fabbicante does make some fibers having diameters less than one micrometer. Therefore, it is clear that Fabbicante provides an enabling disclosure as to the making of the claimed continuous fibers with average diameters of less than 1 micrometer.

The applicant appears to be asserting that one skilled in the art would be unable to make the less than one micrometer fibers in the absence of more than one micrometer fibers and that one skilled in the art would also be unable to alternatively separate the less than one micrometer fibers from the more than one micrometer fibers. The examiner respectfully disagrees. The examiner contends that the applicant has failed to show, or attempt to show, that one skilled in the art would be unable to perform one or both of these processes. It is well settled that unsupported arguments are no substitute for objective evidence. In re Pearson, 494 F.2d 1399, 1405, 181 USPQ 641, 646 (CCPA 1974).

In response to the examiner asserting that Fabbicante is not the sole source of enablement, and that Zucker specifically mentions the teachings of USPN 5,225,018 to Zeldin, the applicant (and Michael Davis, see Davis Declaration) now asserts that Zeldin is not enabling because Zeldin allegedly does not mention a specific spinning technique and because specific fiber diameters are allegedly not mentioned. The examiner contends that even assuming *arguendo*, that Zeldin is not enabling, as explained above, Fabbicante provides an enabling

disclosure as to the making of the claimed continuous fibers with average diameters of less than 1 micrometer.

In response to the examiner asserting that Fabbicante is not the sole source of enablement, and that Zucker specifically mentions the teachings of USPN 5,783,503 to Gillespie, the applicant now asserts that Gillespie is not enabling because Gillespie allegedly does not specifically mention fibers with a diameter of less than 1 micrometer. The examiner respectfully disagrees. Firstly, even assuming *arguendo*, that Gillespie is not enabling, as explained above, Fabbicante provides an enabling disclosure as to the making of the claimed continuous fibers with average diameters of less than 1 micrometer. Secondly, just because Gillespie allegedly does not mention fibers having a diameter of 1 micrometer or less, does not mean that the process necessarily cannot be used to produce fibers having a diameter of 1 micrometer or less. The applicant has failed to show, or attempt to show, that the process disclosed by Gillespie could not be used to make fibers having the claimed diameter. "Further, since in a patent it is presumed that a process if used by one skilled in the art will produce the product or result described therein, such presumption is not overcome by a mere showing that it is possible to operate within the disclosure without obtaining the alleged product. *In re Weber*, 405 F.2d 1403, 160 USPQ 549 (CCPA 1969)." See MPEP 716.07.

Regarding the currently claimed properties, the examiner acknowledges that Zucker does not disclose the basis weight, hydrohead, and Frazier permeability as described in the claimed formula. With that said, it is reasonable to presume Zucker inherently meets this limitation because of the use of similar materials and similar methods. Alternatively, the claimed limitations are readily obtainable through routine experimentation with variables such as fiber

size, basis weight and solids fraction and because it is understood by one of ordinary skill in the art that discovering an optimum value of a result effective variable involves only routine skill in the art. In response, the applicant asserts that nothing would lead the skilled artisan to expect the relationships between the variables and the claimed properties. The examiner respectfully disagrees. The applicant appears to be arguing the presence of unexpected results, but it is well settled that unsupported arguments are no substitute for objective evidence.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

atp

gpf 12/19/06
ANDREW PIZALI
PRIMARY EXAMINER